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Assessing student satisfaction in transnational higher education

Stephen Wilkins
International Centre for Higher Education Management, School of Management, University of Bath, Bath, UK, and

Melodena Stephens Balakrishnan
Faculty of Business and Management, University of Wollongong in Dubai, Dubai, United Arab Emirates

Abstract
Given that there exists in the literature relatively little research into student experiences in transnational higher education, this study seeks to identify the determinants of student satisfaction at international branch campuses in the United Arab Emirates (UAE). This quantitative study involved 247 undergraduate and postgraduate students at branch campuses in the UAE who completed a questionnaire using either hard copies or an online version. It was found that levels of student satisfaction at UAE branch campuses were generally high. The factors that were most influential in determining whether or not a student at a UAE branch campus was satisfied overall with their institution were quality of lecturers, quality and availability of resources, and effective use of technology. The findings indicate that there remains scope for UAE branch campuses to further increase levels of student satisfaction. Managers might use the findings to review their own institution's performance so that areas for improvement can be identified. Given that cultures, customs, traditions and social contexts vary considerably in different locations, the findings of this study are not generalisable across all international branch campuses globally. The logit model developed had an 87.4% success rate in predicting whether or not a student at a UAE branch campus was satisfied overall with their institution, demonstrating the potential usefulness of logistic regression as a predictive and explanatory tool in education management.

Keywords Student satisfaction, transnational higher education, international branch campuses, service quality, logistic regression model

Paper type Research paper

1. Introduction
Since the turn of the century, the establishment of international branch campuses has accounted for most of the growth in transnational higher education. The term 'transnational education' refers to programmes in which learners are located in a country other than the one in which the awarding institution is based (McBurnie and Ziguras, 2007, p. 21), and an international branch campus is an educational facility where students receive face-to-face instruction in a country different to that of the parent institution. There are two features that distinguish branch campuses from other forms of transnational education that also adopt a physical 'bricks and mortar' approach: first, a branch campus operates under the same name

as its parent institution, and second, the qualifications that the students gain bear the name of the parent institution (Wilkins, 2010).

In 2009, there were over 162 international branch campuses worldwide, and 40 of these were located in the United Arab Emirates (UAE) (Becker, 2009). The UAE has more international branch campuses than any other country. The largest source countries of international branch campuses globally (where the parent institutions are based) are the United States (US), Australia and United Kingdom (UK) (Becker, 2009). It has been estimated that by 2025 transnational education will account for 44 per cent of the total demand for international education (Bohm *et al*., 2002).

Students are generally considered the primary customers of a university, even in countries where they do not pay tuition fees (Douglas *et al*., 2006). Although the tuition fees charged at international branch campuses can be substantially lower than the fees charged at home campuses, in many cases the fees charged at branch campuses are still very substantial. For example, in 2011, the tuition (and other mandatory) fees for a four-year undergraduate programme at New York Abu Dhabi totalled $165,120, while Middlesex University's (UK) three-year programme in Dubai cost $37,602 (compared to $47,520 paid by non-European Union international students at Middlesex's London campus).

Higher education institutions (HEIs) that achieve student satisfaction can benefit in a number of ways. Satisfied students are less likely to drop out (Tinto, 1993); more likely to achieve higher grades (Bean and Bradley, 1986); engage in positive word-of-mouth and collaborate with the institution after they graduate (Alves and Raposo, 2009). The increase in use of social networking and consumer websites such as RateMyProfessors.com has greatly promoted electronic word-of-mouth (Wilkins and Epps, 2011).

Given the highly competitive nature of many transnational higher education markets (Wilkins 2010; Knight 2011) – such as the UAE in the Middle East, and Singapore and Malaysia in South East Asia – institutions that consistently achieve student satisfaction can expect to gain a valuable competitive advantage. In many countries, student satisfaction has become a measure used to compile rankings and league tables, and higher ranked institutions typically benefit by attracting the top scholars and students, higher levels of external funding as well as enabling them to charge the highest tuition fees (Wilkins and Huisman, 2011a).

A survey conducted in the UAE by Wilkins and Balakrishnan (2011) found that students who choose to study at international branch campuses have different motivations and choice criteria compared to those of international students who choose to study at the main campuses of universities based in Australia, the UK or US (Mazzarol and Soutar, 2002; Binsardi and Ekwulugo, 2003; Pimpa, 2005; Shanka *et al*., 2005; Gatfield and Chen, 2006; Maringe and Carter, 2007; Wilkins and Huisman, 2011b). It is interesting to discover therefore if students who choose to study at international branch campuses also have different criteria for determining student satisfaction and whether or not these students are indeed satisfied with their personal experiences at branch campuses.

2. Literature review

The literature on customer satisfaction is rich, but in higher education research the focus has often been on assessing the link between teaching quality/learning outcomes and student satisfaction. Most HEIs issue feedback/evaluation questionnaires to students, the results of which are often taken as a proxy for student satisfaction. In fact, student evaluation surveys are generally used to provide feedback to teachers, as a development tool, and to provide a measure of teaching effectiveness to help managers make decisions about employee retention, reward and promotion (Marsh, 1987). However, Nasser and Fresko (2002) found that less than 10 per cent of lecturers made major changes to their teaching as a result of student evaluations.

There exists in the literature various interpretations of what customer satisfaction actually means. It is generally accepted that customer satisfaction is the product of some type of evaluation process by the customer (Oliver, 1981; Tse and Wilton, 1988). Clemes *et al*. (2007) observe that more recently researchers have viewed customer satisfaction as a summary of emotional and cognitive responses that pertain to a particular focus (such as expectations or actual experiences), which occur after consumption or after accumulative experiences. Elliot and Healy (2001) argue that student satisfaction is a short-term attitude based on an evaluation of their experience with the education service supplied.

Universities are in the business of providing higher education, and so it is to be expected that the students' classroom experience is a primary determinant of student satisfaction. In seeking to find what quality education meant to students in the UK, Hill *et al*. (2003) found that the most important factors were quality of lecturer/classroom delivery, quality of feedback given to students during lessons and on assignments, and lecturer-student relationships in the classroom. García-Aracil's (2009) study examined student satisfaction in 11 European countries and found that despite differences in education systems, satisfaction across different European countries was relatively stable. The factors with the highest levels of influence included contact with fellow students, course content, equipment and stocking of libraries, teaching quality and the supply of teaching/learning materials.

Student satisfaction is not determined solely by the students' teaching and learning experiences but rather by their overall experiences as a customer of a particular institution. In a study conducted in Poland, Sojkin *et al*. (2011) identified social conditions and educational facilities among the key determinants of student satisfaction in higher education. Also, a study in the US found that students' perceptions of institutional ability to provide a good intellectual environment positively affects their level of satisfaction (Hartman and Schmidt, 1995). Wells and Daunt (2011) propose a conceptual model where the physical environment of a HEI (which incorporates layout and design factors and general ambient factors) can lead to student satisfaction as an outcome. They found that a sample of UK students were concerned with comfort and equipment in their learning environments.

The quality of any service encounters, or 'moments of truth' experienced by customers form part of their overall impression of the whole service provided (Carlzon, 1989). Previous research into lecturer/student interactions has used the critical incident technique (CIT), whereby students are required to recall specific positive and negative experiences (Voss *et al*., 2010). In order to deliver high quality services to students, universities must manage every aspect of the student's interaction with all of their service offerings, and in particular those involving its people, as services are delivered by people to people (Douglas *et al*., 2006). Moments of truth, or critical incidents, can make or break a university's image (Banwet and Datta, 2003). A survey conducted by Sohail and Shaikh (2004) in Saudi Arabia found that contact with staff (both teaching and non-teaching staff) was the most influential factor in students' evaluation of service quality.

The terms 'customer satisfaction' and 'service quality' are often used interchangeably, but they are in fact two distinct, although related, constructs (Clemes *et al*., 2007). Parasuraman *et al*. (1988) regarded satisfaction as a transaction-specific measure whereas they saw service quality as a form of attitude gained through long-run overall evaluation. They argued that customer satisfaction determined service quality. In contrast, Cronin and Taylor (1992) argued that service quality is the antecedent of satisfaction. They found, based on empirical research in four different service industries, that satisfaction exerted a stronger and more consistent effect on purchase intentions than service quality, and concluded that customers may not necessarily buy the highest quality service, as convenience, price and availability may enhance satisfaction but not customers' perceptions of service quality. Student satisfaction is also the key determinant of student loyalty (Webb and Jagun, 1997), and it is

student loyalty that encourages positive word-of-mouth and student involvement and cooperation with their institution both during and after their studies.

3. Research questions

Although there exists in the literature a high degree of consensus on the main determinants of student satisfaction in higher education, little research has been conducted on student satisfaction in transnational education (Hoare, 2011). This research, therefore, intends to fill that gap and provide information for HEI managers in transnational higher education that can be used to improve institutional performance.

RQ1: What are the factors that determine student satisfaction at international branch campuses (in the UAE)?

RQ2: Do the factors that determine student satisfaction at international branch campuses (in the UAE) differ significantly across groups categorised by (a) gender, (b) nationality, (c) level of study (undergraduate/postgraduate)?

RQ3: What are the factors that would enable accurate prediction of whether or not a student at an international branch campus (in the UAE) is satisfied with their overall experience at that institution?

4. Method

This quantitative survey utilised a questionnaire developed by the authors, which consisted of 49 items relating to student perceptions, experience or satisfaction. As student satisfaction in transnational higher education has to date been little studied, the literature revealed no scale that could be adopted in its entirety. Nevertheless, parts of scales were taken or adapted from various studies on student satisfaction, such as Mai, 2005; Douglas *et al*.; 2006 Clemes *et al*., 2007; and Miliszewska and Sztendur, 2010. Three items were used to collect personal data about the respondents: their gender, nationality and level of study (undergraduate/postgraduate). Each item was randomly placed on the questionnaire to encourage respondents to consider each question individually. The questions used a 7-point rating scale where 1 = disagree strongly and 7 = agree strongly. The survey questionnaire was completed by respondents using hard copies or an online version.

The study involved students who were studying at an international branch campus in the UAE. The survey questionnaire was distributed by students of a capstone project at an international branch campus in the UAE. A capstone project is a final year undergraduate subject - in this case Marketing - that has a report on a particular topic embedded in it, which synthesises all knowledge accumulated in previous subjects studied. Students posted the survey link on their Facebook accounts and sent personal emails to all of their friends in the UAE who study at an international branch campus. The questionnaire informed respondents how the data was going to be used and students completing the capstone project gave their consent for us to use the data they obtained.

The questionnaires were distributed over a five-week period in February/March 2011, generating 247 usable responses. Most of the responses came from just six institutions - one Australian, two UK and three North American. Over 85% of the respondents were following a programme in Business, Management or Computer Science/Information Technology, which is not surprising given that most branch campuses in the UAE operate in these fields and 43% of all students at non-federal institutions in the UAE study these subjects (Aboul-Ela, 2009). Table I shows a summary profile of the respondents.

Table I. Summary profile of respondents (*n* = 247)

Categories		Number	%
Gender	Male	127	51.4
	Female	120	48.6
Nationality	Indian	78	31.6
	Pakistani	55	22.2
	Emirati (UAE)	32	13.0
	African	18	7.3
	Other	64	25.9
Level of study	Undergraduate	161	65.2
	Postgraduate	86	34.8

A logit, or logistic regression, model was developed, which is a qualitative non-linear binary-choice model, where individuals are faced with a choice between two alternatives. Logistic regression is well suited to the study of categorical outcome variables in an educational context, for example determining whether individuals enrol on a particular course or not, whether individual students complete a course or drop out, or indeed, as this study investigates, whether students are satisfied or not with their institution.

The logit model was selected for this study because it has the advantages of being able to work with binary response independent and dependent variables, it is not constrained by normality or equal variance/covariance assumptions for the residuals and in terms of classification and prediction it has been shown to produce fairly accurate results (Fan & Wang, 1999). Similar to other statistical models, logistic regression models derived from samples are subject to sampling errors, thus making them unsuitable for small samples. Long (1997) suggested that, as a rule of thumb, a minimum of 10 observations per independent variable is advisable. As the sample size used in this study was 247 and our model had six independent variables, the minimum observation/predictor ratio recommended by Long (1997) has been met.

The model developed has six independent variables (see Appendix A for scale items). Scale reliability was assessed using Cronbach's Alpha. The alpha values ranged from .84 to .92, satisfying the minimum .70 recommended by Nunnally (1978). For each of the independent variable items, scores of 1-4 were coded 0 = not satisfied, and scores of 5-7 were coded 1 = satisfied. Although scores of 4 indicate that the student held a neutral or indifferent attitude to the item, it has been interpreted that he/she was not satisfied. Therefore, students who are classified as 'not satisfied' are not necessarily dissatisfied, but they are not satisfied.

The study sought to discover if students were satisfied or not with their overall experience at their institution and so the dependent variable is 'overall satisfaction', which comprised five items (see Appendix A). The dependent variable scale achieved an alpha value of .94. The coding was completed as for the independent variables so that 0 = not satisfied overall with institution, and 1 = satisfied overall with institution.

The logit model is estimated as:

$$Ln\,[P/(1\text{-}P)] = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \ldots\ldots\ldots + \beta_n X_n$$

where P is the odds that the student responded 'Satisfied', 1-P is the odds that they responded 'Not satisfied', β_0 is the intercept or constant term, X_i are the independent variables as shown in Appendix A, and β_i $i = 1, 2, 3, \ldots n$ are the logistic regression coefficients associated with each independent variable. The model was developed using the PASW Statistics 18 software package.

5. Results and discussion

The logit model developed possessed the ability to predict whether or not a student at a branch campus in the UAE was satisfied or not satisfied overall with their institution. A total of 247 cases were analysed and the full model significantly predicted the students' choices (omnibus chi-square = 154.74, $df = 6$, $p < .000$). The model accounted for between 46.6% (Cox & Snell R^2) and 66.0% (Nagelkerke R^2) of the variance in student choices. The model was successful in predicting 91.9% of the students who were satisfied and 77.0% of those who were not satisfied. This resulted in 87.4% of all predictions being accurately predicted by the model. Table II shows the observed and predicted values, and Table III gives the coefficients, the Wald statistic, the associated degrees of freedom and the probability values for each of the predictor variables. The predictor variables that are significant at the 5% level are LECT (quality of lecturers), RESO (quality and availability of resources) and TECH (effective use of technology). The Hosmer and Lemeshow test divides the subjects into deciles based on predicted probabilities and then computes a chi-square from observed and expected frequencies. The non-significant chi-square ($p = .246$) indicates that the model fits the data at an acceptable level.

A one-way between groups multivariate analysis of variance (MANOVA) was then performed to investigate differences in satisfaction between males and females, students of different nationality and students studying at undergraduate and postgraduate levels. Only the differences in satisfaction across groups categorised by level of study appeared significant: Gender: F (6, 240) = 1.48, $p = .185$, Wilks' lambda (λ) = .964; Nationality: F (24, 828) = .70, $p = .858$, Wilks' λ = .933; Level of study: F (6, 240) = 2.42, $p = .040$, Wilks' λ = .947.

Table II. Classification table: observed and predicted values[a]

Observed		Predicted		
		SATN		
		Not satisfied	Satisfied	Percentage Correct
SATN	Not satisfied	57	17	77.0
	Satisfied	14	159	91.9
	Overall Percentage			87.4

[a] The cut value is .500

Table III. Summary information for independent variables and constant term

	B	*SE* β	Wald's χ^2	*df*	*p*	e^{β}
LECT	1.299	.496	6.861	1	.009	3.667
PROG	.539	.509	1.120	1	.290	1.714
ASST	.662	.500	1.755	1	.185	1.939
RESO	1.185	.571	4.306	1	.038	3.271
TECH	1.146	.493	5.406	1	.020	3.145
FACS	.942	.506	3.474	1	.062	2.566
Constant	-2.479	.426	33.838	1	.000	.084

In order to better interpret the MANOVA results, univariate ANOVAs were performed as post-hoc analysis (Appendix B). Although the MANOVA results indicated a statistically significant difference between undergraduates and postgraduates, the univariate test shows the results as mostly non-significant. The reason for this is that the multivariate test takes account of the correlation between dependent variables and so it has more power to detect group differences (Field, 2009, p. 610). As the univariate tests do not reveal statistically significant differences between groups of different categorisations, this suggests that institutions are not able to effectively employ strategies which aim to improve the satisfaction of specific categories of student.

Pearson's chi-square tests were used to investigate whether there was association between groups of students categorised by gender, nationality and level of programme and overall satisfaction with their institution. The results of the chi-square tests indicated that none of the relationships between the groups and levels of satisfaction were significant (Appendix C). The strength of association between each pair of variables was assessed using the Cramer's V test, which indicated relationships of weak strength (1 being the maximum possible value).

The descriptive statistics reveal that the satisfaction of Indian and Pakistani students was higher than those of African and Emirati students. Attitudes toward higher education vary in different countries and cultures. In India, for example, higher education and higher education teachers are both generally highly respected (Smith, 2009). Cultural differences between different nationalities can explain student preferences for different learning and assessment styles, and a larger cultural distance between a student's home country and the institution's home country (Hofstede 1984) might contribute toward lower levels of satisfaction.

Students' levels of satisfaction (and the scores that students award in feedback/evaluation surveys) can be affected by a wide range of factors, such as the student's level of academic attainment (Wilkins and Epps, 2011) and individual personality differences, such as locus of control, which defines how individuals view outcomes in terms of their perceived control over future events and environmental influences (Garger *et al*., 2010).

Students with an internal locus of control believe that outcomes in his/her life are controlled by his/her own actions, and are likely therefore to engage in behaviours consistent with greater achievement. Also, expectancy theory suggests that when students perceive they

are able to do well on a course they are more likely to put in greater effort, thereby increasing the likelihood of greater achievement and satisfaction (Vroom, 1964; Garger *et al*., 2010). In contrast, a student who struggles to study in the English language – as many UAE students do – might more easily 'give up', leading to lower achievement and satisfaction. The descriptive statistics also revealed that postgraduate students had higher levels of satisfaction than undergraduate students. Institution managers should conduct further research to identify the reasons why certain categories of student tend to have higher or lower levels of satisfaction, so that they can address the issues and improve the satisfaction of all students.

6. Conclusion

A logit model was developed that had an 87.4% success rate in predicting whether or not a student at an international branch campus in the UAE was satisfied overall with their institution. The factors that were most influential in determining whether or not a student was satisfied were quality of lecturers, quality and availability of resources, and effective use of technology. These factors are not different to those cited in previous studies on student satisfaction in other countries (e.g. Hill *et al*., 2003; García-Aracil, 2009; Miliszewska and Sztendur, 2010). However, it should be recognised that student expectations are likely to be different at branch and home campuses. A score of '7' awarded by a student at a branch campus for 'quality and availability of resources' is not be directly comparable with a '7' awarded by students at home campuses because the students at each type of institution will have, at least to some extent, different expectations of what they should receive.

The findings of this study reinforce the message to HEI managers in branch campuses about where they should prioritise their efforts if they are to achieve student satisfaction. Students at branch campuses, as elsewhere, are primarily concerned with their classroom experiences and their access to, and use of, learning resources. In the competitive higher education hubs where many branch campuses operate, achieving increased levels of student satisfaction could result in significant competitive advantage by improving student retention and student achievement and attracting new students through positive word-of-mouth.

It was found that there were significant differences in satisfaction between undergraduate and postgraduate students, so HEI managers should investigate the reasons for the lower levels of satisfaction among undergraduate students. With the exception of African students, more than two-thirds of the students in each group categorised by nationality were satisfied overall with their institution. For institutions that have (mostly) only been in existence for several years this is a commendable result, although there obviously remains scope for further improvement.

Given the criticisms of international branch campuses to be found in the literature regarding quality and other issues, including political and ideological concerns (Altbach, 2004; Becker, 2009; Donn & Al Manthri, 2010; Naidoo, 2007; Wilkins, 2010), the managements of branch campuses in the UAE might be relatively pleased with the findings of this study. That said, the levels of student satisfaction found among UAE branch campuses might not be as high as the average satisfaction levels found at UK universities - see for example The Times Higher Education student experience survey (THE, 2011). The Times Higher Education survey had many similar questions to those in this research and it also used a 7-point rating scale, making comparisons relatively easy. However, it should be noted that students in the UK are much more familiar with participating in student satisfaction surveys than students in the UAE, and as UK students are generally aware that the results of satisfaction surveys are often used in institutional rankings they have an incentive to give higher scores. Nevertheless, UAE branch campuses should still develop and implement strategies that increase levels of student satisfaction, with the goal that every 'moment of truth' or 'critical incident' that students encounter is a positive experience. HEI managers

might use the findings of this study to review their own institution's performance so that areas for improvement can be identified.

A weakness of this study is that it is unable to specify levels of student satisfaction in specific institutions, which means that we cannot analyse the impacts on satisfaction of national systems of education or different teaching and staffing models, such as the effects of employing part-time, locally recruited lecturers rather than lecturers who work full-time and who were recruited from the institution's home country. Although the researchers know which institutions the respondents were at it, since the data collection method relied on personal contacts, it was decided not to conduct any analysis along institutional lines. HEIs in the UAE are particularly concerned about their reputations and although other institutions were invited to participate in this research, they all declined the offer.

Given that cultures, customs, traditions and social contexts vary considerably in different locations, the findings of this study are not generalisable across all international branch campuses globally. Research has already been conducted into student satisfaction with Australian transnational higher education in South East Asia (Milszewska and Sztendur, 2010; Hoare, 2011) but similar studies now need to be undertaken in other regions.

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Appendix A Scale items[a]

Construct	Item	Mean	SD	Mode	Cronbach's α
Independent variables					
Lecturers (LECT)	My lecturers make the subjects interesting	4.68	1.65	5	.90
	My lecturers are experts in their fields	5.07	1.65	7	
	My lecturers use language that I understand	5.33	1.56	6	
	I have as much contact with my lecturers as I need	4.92	1.64	5	
	My lecturers are sympathetic if I have problems that affect my work	4.82	1.65	5	
Programme (PROG)	Course content is made relevant to the UAE	4.68	1.60	5	.87
	My course is relevant to my intended future employment	5.37	1.55	6	
	My course is intellectually stimulating	4.89	1.57	6	
Assessment & feedback (ASST)	Modules/units are assessed using a variety of methods	5.07	1.52	6	.84
	My course involves coursework/on-going assessment	5.22	1.63	6	
	I receive detailed and helpful feedback on my work	4.76	1.68	6	
Resources (RESO)	The library meets all of my learning needs	4.83	1.57	5	.86
	The course materials satisfy all of my learning needs	5.00	1.58	5	
	Technology is used to provide learning resources outside of lessons	4.98	1.60	6	
	I can always find a computer to work on when needed	5.14	1.71	6	
Technology (TECH)	All teaching/lecturing rooms have good audio-visual facilities	5.04	1.60	6	.84
	My lecturers use technology well in their teaching	4.87	1.56	5	
	I use ICT when undertaking research and to present my work	5.23	1.61	7	
Facilities & social life (FACS)	My campus has a good range of facilities e.g. a refectory, sports and leisure provision	5.01	1.72	6	.92
	My university has lots of clubs and societies for students	5.09	1.69	7	
	A lot of leisure activities and entertainment are provided for students	4.90	1.68	5	
	My university has a good careers advice and internships service	4.84	1.65	5	
	There is a lively social scene on campus	5.00	1.68	6	
	My university provides accommodation for students	5.38	1.53	7	

Dependent variable					
Satisfaction (SATN)	So far, my course has met all of my expectations	4.98	1.60	6	.94
	I am very satisfied with my university and would definitely choose it again	4.96	1.73	5	
	My choice of university was a wise decision	5.28	1.58	6	
	My programme offers good value for money	4.88	1.63	6	
	I would recommend my university to friends	5.05	1.70	5&7[b]	

[a] All items used a 7-point rating scale, where 1= disagree strongly and 7 = agree strongly.
[b] Multiple modes (each with n = 56, 22.7% of respondents).

Appendix B MANOVA test results of between-subject effects (univariate ANOVAs)

Components	Group means* (SD)					*F*	*Sig.*
	Male	Female					
Lecturer	5.02 (1.44)	4.87 (1.27)				.720	.397
Programme	4.94 (1.50)	5.01 (1.28)				.174	.677
Assessment	4.98 (1.48)	5.04 (1.27)				.117	.733
Resources	4.98 (1.41)	4.98 (1.29)				.002	.967
Technology	5.08 (1.42)	5.00 (1.31)				.248	.619
Facilities	5.01 (1.42)	5.03 (1.29)				.009	.926
	African	Emirati	Indian	Pakistani	Other		
Lecturer	4.13 (2.32)	4.79 (1.36)	5.06 (1.21)	5.07 (1.31)	5.00 (1.19)	2.014	.093
Programme	4.24 (2.16)	4.78 (1.40)	5.10 (1.24)	5.02 (1.41)	5.07 (1.25)	1.680	.155
Assessment	4.13 (2.22)	4.93 (1.56)	5.17 (1.14)	5.14 (1.39)	5.01 (1.18)	2.295	.060
Resources	4.11 (2.13)	4.82 (1.44)	5.10 (1.67)	5.19 (1.35)	4.98 (1.16)	2.528	.041
Technology	4.24 (2.22)	4.90 (1.41)	5.17 (1.23)	5.27 (1.34)	4.98 (1.15)	2.283	.061
Facilities	4.14 (2.17)	4.87 (1.38)	5.15 (1.16)	5.22 (1.32)	5.02 (1.23)	2.536	.041
	UG	PG					
Lecturer	4.82 (1.41)	5.18 (1.25)				3.914	.049
Programme	4.81 (1.47)	5.28 (1.19)				6.669	.010
Assessment	4.95 (1.44)	5.14 (1.25)				1.102	.295
Resources	4.89 (1.43)	5.16 (1.16)				2.268	.133
Technology	4.96 (1.45)	5.19 (1.18)				1.639	.202
Facilities	4.97 (1.42)	5.12 (1.22)				.653	.420

* Measured on a 7-point rating scale where 1 = disagree strongly and 7 = agree strongly.
UG = undergraduate students, PG = postgraduate students.

Appendix C Chi-Square test results

Group	Not satisfied (%)	Satisfied (%)	χ^2	*df*	*Sig.*	Cramer's V
Males	31.5	68.5	.294	1	.588	.035
Females	28.3	71.7				
African	50.0	50.0	4.119	4	.390	.129
Emirati (UAE)	31.2	68.8				
Indian	28.2	71.8				
Pakistani	25.5	74.5				
Other	29.7	70.3				
Undergraduate	32.3	67.7	1.205	1	.272	.070
Postgraduate	25.6	74.4				